Transition to IPv6: Why Online Marketers Should Care

If you think it's just IT's problem, think again.

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There's a transition happening on the Internet that could cause significant disruption of services for your customers if handled incorrectly or not at all, and this disruption is of "hair pulling" caliber. IT calls you and tells you that tomorrow--or worse, in one hour--your website will be down for an unknown amount of time. When your website goes down, your business goes down. Even if you are not selling directly online, that is where your future revenue is engaging with you, and "Site Temporarily Unavailable" is not the kind of impression you want to make.

This disruption is due to some fundamental growing pains being experienced by the Internet. Many years ago when it was created by a team working for the Defense Department's DARPA program, Internet Protocol version 4, or IPv4, was put in use to handle all Internet traffic. Individuals who logged on were assigned an IP address, and the developers built IPv4 with the capability to handle around 4 billion individual IP addresses. At the time it was assumed that was more than enough for this "experiment," and as Vint Cerf, former program manager for DARPA put it, "The experiment never ended." Now, with IP addresses running out worldwide, the Internet is ready to move to Internet Version IPv6, a new Internet Protocol capable of handling hundreds of trillions of new IP addresses. With the total number of worldwide Internet users currently eclipsing 2 billion people, and the proliferation of Internet-enabled devices (tablets, mobile phones, home appliances etc), each requiring a unique IP address, it's not hard to understand why. An IP address, or an Internet Protocol address, is a numerical code that serves as an identifier for an Internet server, and every server has a unique address, much like a fingerprint is a unique identifier to each person.

This change from IPv4 to IPv6 is an unavoidable necessity, and none of the risks mentioned are insurmountable with the right preparation. However, according to a recent report done by Ipswitch, 88% of business networks appear to be unprepared for it. ***Are you one of those businesses? How should online marketers and their staff deal with this encroaching and important issue? Should you be concerned that your online strategies will fall into the proverbial black hole if your vendors and internal IT departments don't have their ducks in a row?***

IPv6: PERFORMANCE AND RELIABILITY ISSUES

No marketer today can afford to have their website down unnecessarily, or their user experience degraded. All of those interactions are too critical to revenue. If there are problems, marketing is going to hear about it. As your IT department prepares to deal with this transition, they will need to put in place new technologies to handle the new IPv6 traffic (see: Transitional Technologies). If marketers are proactive and address the transition with their IT departments, they can avoid having to deal with a customer, or management, backlash that there is a problem with the website.

There wonôt be one ñmagic dayò when all Internet traffic suddenly converts over to IPv6, the shift will be gradual and take place over many years. As IT departments prepare for the transition from one Internet protocol to another, and attempt to handle both IPv4 and IPv6 traffic at the same time, there could be some performance and reliability issues. These may include one or more of the following:

- Poor or degraded service or website performance
- Denial of service
- Reliability issues due to weaker network connections and monitoring
- Broken applications (VoIP services, Geo-locating services)
- Lack of reporting and analytics tied to IPv6 addresses

While itôs impossible to say exactly what will happen for each specific business, if anything at all, organizations need to prepare now to deal with potential issues. The better prepared your organization is for the transition to IPv6, the better you will be able to mitigate these performance and reliability issues.

The good news is there is also an upside of IPv6 for marketersð what do we stand to gain?

THE UPSIDE: Granularity

As we move toward IPv4 address depletion, ISPs have needed to aggregate IP addresses to handle the demand. So, for example, a bank with many branches is often identified as one IP address, and multiple companies may even be ñhiddenò behind one address. What this means for online marketers is that you lose the granularity necessary to identify the companies visiting your website, personalize experiences and content, and optimize lead flows.

As more companies begin to adopt IPv6, marketers will have greater granularity when identifying the website traffic ï from various businesses, office locations and devices ï hitting websites. Particularly for the B2B marketer, being able to identify the companies engaging with you enables tremendous personalization (finally). As IPv6 rolls out, there will be enough addresses for each business and branch to be identified by its own specific IP address. As a result, marketers will be able to gain better insight into their customers, deliver more personalized website experiences, and drive higher website conversion.

So, what are some easy steps marketers can take right now?

TIME TO TALK TO IT

The first thing marketing professionals need to do is get together with IT. Start with the question *'which parts of my business will be impacted by the transition?'* What mission critical tools do you use that depend on IP addresses? Are they integrated on the browser-side or the server-side? This integration will define whether your company must be IPv6 compliant for the technologies to continue to effectively operate during the transition (see: Integration). Present this list of mission critical tools to your IT department. Are they IPv6 ready? If not, how will that impact your programs, and do you have workarounds to address those issues?

UNDERSTAND THAT THE TRANSITION TO IPV6 DEPENDS ON PEOPLE OUTSIDE YOUR COMPANY AS WELL

Internet Network protocols are built as ñstacks,ò where a number of layers each provide a part of the required functionality to make everything run. The transition to IPv6 doesnôt just depend on your internal IT departments but, rather, on multiple vendors that are powering your business. Hosting providers, networking equipment vendors, operating systems, Web servers, home-grown applications, and databases will ALL need to convert to IPv6 in order for your organization to be truly IPv6 compatible. In addition to worrying about your website or specific web-based applications ï which live at the top layer of the ñstackò ï companies must first ensure that the ñbottomò of the stack (including hosts, network providers, etc.) is being converted over to IPv6.

FIND YOUR TIPPING POINT

Another crucial question businesses need to ask themselves is *"at what point will we need to handle both IPv4 and IPv6 simultaneously?"* When is the moment when the percentage of IPv6 visitors becomes high enough that ignoring them will hurt your business? For some companies, any loss of traffic will be unacceptable; for others, the cost of implementing IPv6-related changes will not be worth it until a ñcritical massò situation presents itself. Meaning, enough IPv6 is being LOST by your lack of transition that it will become necessary to put steps in place to handle that traffic. Most companies will likely adopt a ñdual stackò approach to handle both IPv4 and IPv6 traffic (see Transition Technologies).

SIDEBAR: IPv6: Transitional Tips for Online Marketers

- ✓ *Time to Get Educated:* Understand IP addresses and which part of your business is dependent on IP addresses. Which tools require IP address identification (e.g. analytics) and how will they be impacted?
- ✓ *Talk to IT:* Ensure marketing/IT alignment by setting up a line of communication between you and IT. Present a list of mission critical applications and present it to IT. Are these applications integrated on the client-side or the browser-side? This will determine how they fare during the IPv6 transition.
- ✓ *Time is of the Essence:* Understand the status of your companyôs transition to IPv6 and eliminate surprises. Will it be compliant within the next few weeks? Months? Years?
- ✓ *Figure out Plan B. And C:* If key applications will be impacted in the short or long term by your companyôs transition, determine workarounds. Which campaigns can be run without deep analytics? Which marketing technology vendors can provide stop gap solutions? What are some ways to stem the tide of potentially lost web traffic?
- ✓ *Chat with Vendors:* Understand what their IPv6 transition plans are and how, if at all, their services will be impacted *(see Plan B tip above).*
- ✓ *Understand the Tipping Point:* Work with IT to determine the rate of IPv6 adoption and at which stage ñignoringò v6 visitors significantly impacts your business. Put transition plans in place before that inflection point.

NOW IS THE TIME TO START PREPARING FOR THE FUTURE

Right now Regional Internet Authorities (RIRs) around the world are already running out of IPv4 addresses. Although most traffic by far still runs over IPv4 with only 1% running on IPv6 according to a recent report by Arbor Networks, Major organizationsô IT departments are already preparing for this change. Itôs time to figure out where your IT department stands.

Whether you are prepared or not, the new protocol is taking charge, and businesses will be wise to take the necessary steps to handle this change now in order to avoid disruption to their web sites. Those that do will undoubtedly be in much better shape when IPv6 is adopted on a mass scale. Ultimately, the adoption of IPv6 will help the Internet and the countless businesses it enables to run more efficiently. So be aware, be ready, and communicate. The quicker you start preparing for v6, the better off youôll be when that tipping point is reached.

SIDEBAR: Transitional Technologies

There are several technologies in place today that allow for Web-centric businesses to deal with the adoption of IPv6 without completely abandoning IPv4 and the customers that remain tethered to that technology. Two popular examples are:

Dual Stack
Dual stack is the use of machines that run both IPv4 and IPv6 protocol stacks. This is the most common approach by many businesses to affectively handle the transition and may require hardware and software upgrades.

Tunneling
To reach the IPv6 Internet, an isolated host or network must use the existing IPv4 infrastructure to carry IPv6 packets. This is done using ñtunneling,ò which encapsulates IPv6 packets within IPv4, in effect using IPv4 as a link layer for IPv6.

Each transitional technology may have drawbacks and complications, but one or a combination of these solutions will need to be incorporated as the transition from IPv4 to IPv6. Marketing should talk with IT about which approach best suits their business and customers.

SIDEBAR: How Does Integration Impact the IPv6 Transition?

In terms of integration with marketing technology vendors, such as Demandbase, there are two scenarios that will determine whether or not the transition to IPv6 will impact your web site and applications: is the technology integrated on the browser-side or on the server-side?

We have used the Demandbase Real-Time ID Service as an example below to give these scenarios context, and this will also hold true for analytics, ad serving and tracking, content delivery applications, etc.

Browser-side integration:
This is the simplest form of web technology integration. In order to identify the companies visiting your web site, Demandbase Real-Time ID leverages the IP address of the visitor to deliver firmographic data back to the clientôs system to enable you to deliver a personalized Web experience based on the visitorôs attributes. With the transition to IPv6, the question becomes ï are visitors to your site coming in over IPv4, IPv6, or both? Because Demandbase pulls the IP address directly from the header and the IP address will never pass through your server, it does not matter if you are yet IPv6 compliant for the technology to continue to work during the transition.

Server-side integration:
Customers that integrate marketing technologies like Demandbase on the server-side are pulling the IP address and delivering it to Demandbase to identify the company of the visitor before content is rendered. In this case, your server must be IPv6 compliant, because you are delivering the address to Demandbase, rather than Demandbase pulling it directly from the header, and you will likely need to run a dual stack to identify both IPv4 and IPv6 addresses.

SIDEBAR: How Prepared are Businesses for IPv6?

Demandbase commissioned FOCUS to conduct a survey among B2B marketing and IT professionals to determine how prepared businesses are for the oncoming IPv6 transition.

Findings show a need for better education, as businesses say theyôre concerned about the changes, but are uncertain exactly how theyôll be impacted, and most have yet to start planning. Small businesses in particular are ill-prepared and need to take action sooner rather than later, as they are least likely to have the infrastructure in place to support a smooth transition.

Uncertainty Reigns

Across the board respondents are unsure how IPv6 will impact their business

- Nearly a quarter of respondents (23%) are uncertain which of their companyôs applications will be affected
- Only 12% of all businesses have started planning for the transition with 6% saying they had no awareness of IPv6 at all
- 97% of companies surveyed have yet to set a concrete date by which they hope to be fully IPv6 compliant ï we need to say in the paper what compliant means vs. seemless business operations

Ignorance is bliss…or is it?

Small businesses show little concern or preparation for IPv6 as compared with enterprise companies, who are better equipped to handle the changes

- One-tenth of small businesses are completely unaware of IPv6, while all enterprise respondents reported knowledge on IPv6
- 41% of small businesses report no concerns surrounding IPv6, relative to 7% of enterprise
- Only 3% of small businesses have a formal plan in place to address the impact of IPv6, while 21% of enterprise companies have a plan